

What is claimed is:

1. An optical distribution network system comprising:

an optical line termination;

5 a plurality of optical network units, each of which is connected to said optical line termination through at least one of a first optical network and a second optical network;

monitoring means installed in said optical line termination for detecting a system switching request from each of said plurality of optical network units; and

10 control means installed in said optical line termination for controlling system switching between a working side and a standby side of each of said plurality of optical network units.

2. The optical distribution network system according to claim 1, wherein said control means employs a tree switching method that carries out the system switching between the working side and the standby side of all of said plurality of optical network units at once, when carrying out the system switching of any one of said plurality of optical network units.

20 3. The optical distribution network system according to claim 1, wherein said control means employs a branch switching method that carries out the system switching between the working side and the standby side of only one of said plurality of optical network units, when carrying out the system switching.

25 4. The optical distribution network system according to claim 2, wherein when said monitoring means detects a system switching request sent from at least one of said plurality of optical network units, said control means makes a decision as to whether

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to carry out the system switching considering failure conditions of all of said plurality of optical network units.

5 5. The optical distribution network system according to claim 4, wherein when carrying out the system switching of the working side of all of said plurality of optical network units to their standby side, said control means performs switching control only when a number of failed units on the standby side is less than a number of failed units on the working side.

10 6. The optical distribution network system according to claim 4, wherein when carrying out the system switching of the standby side of all of said plurality of optical network units to their working side, said control means performs switching control only  
15 when a number of failed units on the working side is less than a number of failed units on the standby side.

20 7. The optical distribution network system according to claim 1, wherein each of said plurality of optical network units further comprises switching means for carrying out the system switching between the working side and the standby side when it receives a system switching command from said optical line termination.

25 8. The optical distribution network system according to claim 1, wherein said control means carries out the system switching only when a system switching request from one of said plurality of optical network units continues for more than a predetermined time period.

9. The optical distribution network system according to claim 1, wherein said control means carries out its switching control in a duplex optical distribution network system on a passive optical network system.

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10. The optical distribution network system according to claim 1, wherein said optical line termination further comprises output selecting means for outputting one of upstream messages that are copied via the working side and the standby side by at least one of said plurality of optical network units, and wherein at least one of said plurality of optical network units further comprises output selecting means for outputting one of downstream messages that are copied via the working side and the standby side by said optical line termination.

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11. The optical distribution network system according to claim 10, wherein at least one of said plurality of optical network units comprises transmission stop means for halting transmission of one of the upstream messages to be copied to the working side and standby side of said optical line termination.

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12. The optical distribution network system according to claim 10, wherein at least one of said plurality of optical network units comprises a gate for preventing one of the messages to be copied from being copied by suppressing it.

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13. The optical distribution network system according to claim 10, wherein the optical line termination comprises a gate for preventing one of the messages to be copied from being copied by suppressing it.

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